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## (54) PERMANENT MAGNET AND MATERIAL THEREOF

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To acquire a high maximum product with high saturation magnetization and to improve temperature characteristics of a coercive force, by allowing a main hard magnetic phase represented by a specific formula to be ThMn12 type crystal structure.

**SOLUTION:** The permanent magnet material is represented by a formula (R is one element selected among rare earth elements comprising Y, M is one element selected among Ti and Nb, T is one element selected among Ni, Cu, Sn, V, Ta, Cr, Mo, W, and Mn, A is one element selected among Si, Ge, Al, and Ga, while  $1 \leq u \leq 0.7$ ,  $0 \leq v \leq 0.8$ ,  $0 \leq w \leq 0.1$ ,  $5 \leq x \leq 12$ ,  $0.1 \leq y \leq 1.5$  related to u, v, w, x, and y), and main hard magnetic phase is ThMn12 type crystal structure. The permanent magnet is improved in saturation magnetization and coercive force, with temperature characteristics of the coercive force improved.

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